

### REMARKS

The Office Action dated November 6, 2003 has been received and carefully noted. The following remarks are submitted as a full and complete response thereto.

Upon entry of this response, claims 1-4, 7, and 10-12 will be pending in the present application. Claims 1 and 7 are independent claims. Claims 1-4, 7, and 10-12 are respectfully submitted for consideration.

#### Rejection of Claims 1 and 7 Under 35 U.S.C. § 112, First Paragraph:

Claims 1 and 7 of the present application were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. This rejection is respectfully traversed.

In the Office Action, it is alleged that the specification of the present application does not teach that the interdependence between the wavelength of an optical signal obtained from the output of the filter and the wavelength of the control signal is known. Applicant respectfully disagrees.

Applicant respectfully points out that beginning on line 34 of page 5 of the specification of the present application, it is disclosed that “[s]low scanning again is advantageous, if the interdependence of the filter’s control signal and the pass band is exactly known and it is not affected by the temperature or the effect is known. Hereby scanning is made so slow that after a change of the control the filter will have sufficient time to stabilise (sic) into a new pass band. The control electronics circuit preferably includes a microprocessor monitoring the use of the control signal and processing the obtained measuring results in order to find out the wavelengths” (*emphasis added*). Applicant also points out that, beginning on line 31 of page 6

of the specification, it is disclosed that “[t]o ensure a faultless operation of the arrangement it is of essential importance to know exactly the dependence of the filter control and of the wavelength obtained from the filter output” (*emphasis added*). Applicant further points out that, beginning on line 1 of page 7 of the specification, it is disclosed that “[c]alibration is needed, if the wavelength’s relative dependence on the filter control is known” (*emphasis added*). Even further, Applicant respectfully points out that originally-filed claim 7 recited that “the interdependence is known between the wavelength of the control signal and the wavelength of the optical signal obtained from the filter output”.

At least in view of the above, Applicant respectfully submits that the specification of the present application, as originally filed, fully supports the subject matter recited in currently-pending claims 1 and 7. More specifically, Applicant points out that the interdependence between the wavelength of an optical signal obtained from the output of the filter and the wavelength of the control signal was clearly described in the specification in such a manner as to convey to one skilled in the art that the Applicant had possession of the claimed invention.

At least in view of the above remarks, reconsideration and withdrawal of the rejection of claims 1 and 7 under 35 U.S.C. § 112, first paragraph, is respectfully requested.

Rejection of Claims 1-4, 7, and 10-12 Under 35 U.S.C. § 102(e):

Claims 1-4, 7, and 10-12 of the present application were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,204,959 B1 to Fujita et al. (Fujita ‘959). This rejection is respectfully traversed.

Claim 1, upon which claims 2-4 depend, recites a method of measuring wavelengths of optical signals traveling in an optical fiber. The method recited in claim 1 includes the step of conducting the optical signals to a narrowband optical filter controllable by a control signal, the

interdependence between the wavelength of an optical signal obtained from the output of the filter and the wavelength of the control signal being known. The method also includes the steps of converting the optical signals obtained from the output of the optical filter into an electric signal and adjusting the filter by changing the control signal in such a way that the window formed by its pass band will scan the entire wavelength range being measured. The method further includes the step of determining the control signals corresponding to the peak values of the electric signal, and determining the wavelengths corresponding to the control signals.

Claim 7, upon which claims 10-12 depend, recites an arrangement for measuring wavelengths of optical signals traveling in an optical fiber. The arrangement recited in claim 7 includes a narrowband optical filter controllable by a control signal, the interdependence between the wavelength of an optical signal obtained from the filter output and the wavelength of the control signal being known, and having as an input the optical signals to be measured. The arrangement also includes a light detector connected to the output of the optical filter being capable of converting the optical signals into an electric signal. The arrangement further includes a control electronics circuit connected to the control input of the filter to give the control signal being adjustable for scanning the entire wavelength range being examined and to the light detector to receive the electric signal.

Applicant points out that, according to certain embodiments thereof, the claimed invention provides methods and arrangements that make it possible to measure, in as simple a manner as possible and using a multipurpose unit, the number and wavelengths of channels in an optical fiber. The claimed invention also provides arrangements and methods that allows for the relative and absolute power differences of such channels to be measured. It is respectfully submitted that Fujita '959 fails to disclose or suggest the elements of any of the presently

pending claims. Therefore, it is further submitted that Fujita '959 fails to provide at least the advantages discussed above.

Fujita '959 discloses, in Figure 4 thereof, a "signal light monitor" that includes an "optical fiber transmission line 10" and a "light branched by the optical branching coupler 20 [that] is guided to the wavelength tunable filter 30" (column 5, lines 49-56). Fujita '959 also discloses that the "transmission center wavelength of the wavelength tunable filter 30 is swept within a particular wavelength range by the sweeper 40" (column 5, lines 56-58). According to Fujita '959, the "light transmitted through the wavelength tunable filter 30 is detected by the optical receiver 50" and the "output of the light receiver 50 is inputted to an A/D conversion circuit 100" (column 5, lines 60-61). In addition, Fujita '959 discloses that the "A/D conversion circuit 100...outputs the samples to a memory 120", which is illustrated in Figure 4 as included in storage device 70 (column 5, lines 63-66). As also illustrated in Figure 4, arithmetic processor 80 is then used to obtain the wavelength of an output signal. In addition to the above, Fujita '959 also discloses, in column 8 thereof, that arithmetic processor 80 calculates a signal light wavelength ( $\lambda_k$ ) from a sweep starting wavelength ( $\lambda_s$ ), sampling speed (V), sampling interval ( $\tau$ ), and maximum value data and addresses within an address range ( $A_{pk}$ ).

However, Fujita '959 fails to disclose suggest at least the "conducting the optical signals to a narrowband optical filter controllable by a control signal" step recited in claim 1, at least in conjunction with the "adjusting the filter by changing the control signal in such a way that the window formed by its pass band will scan the entire wavelength range being measured" also recited in claim 1. In addition, Fujita '959 also fails to disclose or suggest at least the "narrowband optical filter controllable by control signal" recited in claim 7 of the present application, at least in conjunction with the "control electronics circuit connected to the control

input of the filter to give the control signal being adjustable for scanning the entire wavelength range being examined” also recited in claim 7.

Rather, Fujita ‘959 discloses “a sweep starting signal outputted from the CPU 130” and that “[a]fter the end of sweeping, a sweep end signal is outputted from the sweeper 40 to the CPU 130” (column 6, lines 8-13). Also, Fujita ‘959 discloses that “[t]he transmission center wavelength of the wavelength tunable filter 30 is swept within a particular wavelength range” (column 5, line 56-58). Therefore, in Fujita ‘959, Applicant respectfully submits that the CPU 130 is not adjusted during the scanning, but rather that the wavelength range is determined prior to the starting of the sweeping.

In addition to the above, Applicant respectfully points out that, according to the claimed invention, it is not necessary to know the entire wavelength range to be scanned beforehand. Rather, according to the claimed invention, the filter may be adjusted during scanning with the aid of the control signal. Applicant respectfully points out that this is an advantage that cannot be provided by the devices and methods disclosed in Fujita ‘959.

At least in view of the above, Applicant respectfully submits that Fujita ‘959 fails to disclose or suggest the subject matter recited in claims 1 and 7 of the present application. Therefore, Applicant further submits that claim 1 and 7 are patentable over Fujita ‘959 at least for the reasons discussed above.

As discussed above, claims 2-4 and 10-12 depend upon either claim 1 or claim 7 and therefore inherit all of the patentable distinctions thereof. Therefore, Applicant respectfully submits that claims 2-4 and 10-12 are patentable over Fujita ‘959 at least for the reasons discussed above in connection with claims 1 and 7.

At least in view of the above remarks, reconsideration and withdrawal of claims 1-4, 7, and 10-12 under 35 U.S.C. § 102(e) as being anticipated by Fujita '959 is respectfully requested.

Applicant respectfully submits that all of the issues included in the Office Action have been addressed and that the rejections included in the Office Action have been overcome. Therefore, Applicant respectfully further submits that, at least in view of the above, claims 1-4, 7, and 10-12 of the present application contain allowable subject matter. Therefore, it is respectfully submitted that all claims pending in the present application be allowed, and that this application be passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicant's undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Petition for Extension of Time